

PROJECT DESCRIPTION

I. GENERAL

This project involves the modification of an existing Traffic Control Signal with street lighting and interconnect at the intersection of MD 28 (Norbeck Rd) and MD 82 (Layhill Rd) in Montgomery County. A fastened and arrow shall be installed on the MD 28 (Norbeck Rd) eastbound and westbound left turn approaches to improve safety. MD 28 (Norbeck Rd) is assumed to run an east-west direction.

II. INTERSECTION OPERATION

1. The intersection shall continue to operate in a NEMA six-phase, semi-actuated mode, with the MD 28 (Norbeck Rd) approaches running concurrently. During the concurrent phase the MD 28 (Norbeck Rd) eastbound and westbound left turns shall be regulated by a flashing red arrow. Exclusive left turn phases shall remain in operation for both approaches of MD 28 (Norbeck Rd). The pedestrian phase with pushbutton actuation across the east leg of MD 28 (Norbeck Rd) shall remain in operation. The MD 182 (Layhill Rd) approaches shall also continue to run concurrently.
2. The existing full-traffic-actuated, eight-phase controller with video interface, L.A.U., and L.A.U. Panel and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be utilized at this intersection.
3. Montgomery County Signal Shop shall install APS control unit into controller cabinet. The APS push buttons should be delivered to Bob Ricketts at the Montgomery County Traffic for programming at least two weeks prior to the beginning of work.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, to the appropriate terminals and shall properly label each cable.
2. All controller cabinet wiring will be performed by Montgomery County Forces. Contact Kamal Hamud at (240) 777-8761 seventy-two hours in advance of intended work.
3. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
4. APS will function as follows:
TO CROSS MD 28 (NORBECK RD)

- a. When pedestrian locates and presses the pushbutton for an extended time, the pushbutton unit will announce the following message "Wait to cross Norbeck at Layhill; Crosswalk angles right; Wait".
- b. When the WALK phase begins, the pushbutton unit will provide the following message: "Norbeck, Walk sign is on to cross Norbeck."

The contacts for Montgomery County and SHA are as follows:

| | | |
|---|---|--|
| Ms. Felecia Murphy Assistant District Engineer - Traffic Phone: (301) 513-7404 | Mr. Richard L. Daff, Sr. Chief, Traffic Operations Division Phone: (410) 787-7630 | Mr. Kamis Hamud Mont. County TMC Center 240-777-8761 |
| Mr. Vernon Stinnett Assistant District Engineer - Maintenance Phone: (301) 513-7304 | Mr. Bob Ricketts Signal Shop (Mont Co.) 301-279-1291 | |
| Mr. Victor Grafton Assistant District Engineer - Utility Phone: (301) 513-7350 | Mr. Sonny Bailey Manager, Sign Shop Operations 410-787-7670 | |

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

| ITEM NO. | DESCRIPTION | QUANTITY | |
|----------|---|----------|----|
| 9570 | Sheet aluminum signs to consist of: (ground mount) with hardware. | 16.5 | SF |
| | W11-2 "PEDESTRIAN CROSSING (SYMBOLIC)" sign, (30" x 30") | 2 | EA |
| | W16-7P(L) "arrow (symbolic)" diagonal sign, (12" x 24") | 2 | EA |
| 9571 | Sheet aluminum signs to consist of: (mast arm or pole mount) | 146 | SF |
| | R10-12(2) "YIELD ON FLASHING RED ARROW AFTER STOP" sign, (36" x 48") mast arm mounted. | 2 | EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (48"x72") pole mounted. NORTH / MD 182 / LEFT ARROW | 1 | EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (30"x48") pole mounted. SOUTH / MD 182 / RIGHT ARROW | 1 | EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (48"x72") pole mounted. SOUTH / MD 182 / LEFT ARROW | 1 | EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (30"x48") pole mounted. NORTH / MD 182 / RIGHT ARROW | 1 | EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (36"x72") pole mounted. EAST / MD 28 / LEFT ARROW | 1 | EA |

EQUIPMENT LIST (CONT.)

A. EQUIPMENT TO BE SUPPLIED BY S.H.A..

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|--|----------|
| | M1-5(6) GUIDE SHIELD ASSEMBLY (24"x48") pole mounted. WEST / MD 28 / RIGHT ARROW | 1 EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (36"x72") pole mounted. WEST / MD 28 / LEFT ARROW | 1 EA |
| | M1-5(6) GUIDE SHIELD ASSEMBLY (24"x48") pole mounted. EAST / MD 28 / RIGHT ARROW | 1 EA |
| | Pedestrian education R10-3(1) sign (9"x15"). (Note: Sign to read "PUSHHITON TO CROSS NORBECK ROAD".) pole mounted. | 2 EA |

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|---|------------|
| 1001 | Maintenance of traffic per assignment. | 1 EA |
| 2002 | Test Pit Excavation | 2 C.Y. |
| 5003 | Removal of existing permanent pavement line markings. | 395 L.F. |
| 5004 | 12" white preformed thermoplastic pavement marking lines. | 240 L.F. |
| 5005 | 24" white preformed thermoplastic pavement marking lines. | 155 L.F. |
| 8001 | 12" LED signal head section. | 36 EA |
| 8002 | 2 wire Central Control unit | 1 EA |
| 8008 | Audible/tactile pedestrian pushbutton station & signs. | 2 EA |
| 8009 | Breakaway Pedestal pole (10') | 2 EA |
| 8016 | LED 16" countdown pedestrian signal head. | 2 EA |
| 8024 | Remove and dispose of equipment per assignment. | 1 EA |
| 8040 | Schedule 80 rigid PVC conduit up to 4" - trench. | 55 L.F. |
| 8041 | Wood sign supports up to 4"x6". | 32 L.F. |
| 8042 | Install overhead or ground mounted sign (including all hardware). | 162.5 S.F. |
| 8044 | No. 6 AWG stranded bare copper ground wire. | 70 L.F. |
| 8055 | Electrical cable - 2 conductor (No. 14 AWG). | 245 L.F. |
| 8057 | Electrical cable - 5 conductor (No. 14 AWG). | 750 L.F. |

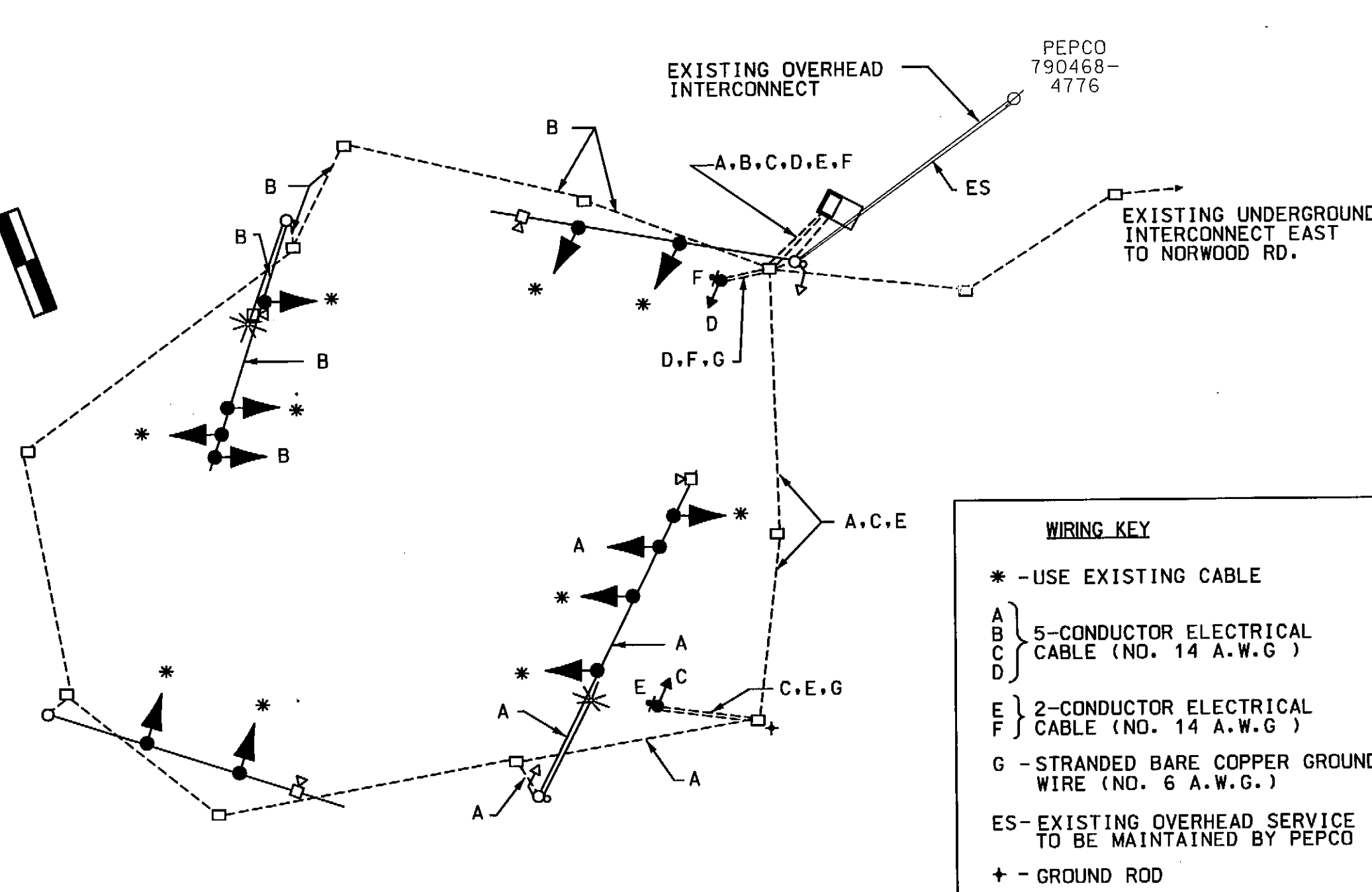
C. EQUIPMENT TO BE REMOVED

All removed signal materials are to become property of the contractor.

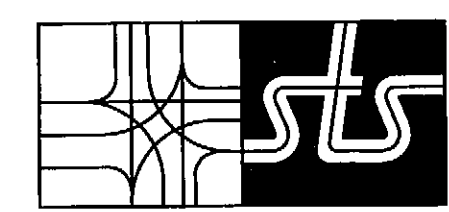
PHASE CHART

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WIRING DIAGRAM




TOD NO: XX439-19
SHA NO: MO242B5A
MD 28 @ MD 182



STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy., NW.
Glen Burnie, MD 21061
Ph (410) 590-5500
Fax (410) 590-6637

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 28 (NORBECK RD) AND
MD 182 (LAYHILL RD)

COLESVILLE, MARYLAND

GENERAL INFORMATION SHEET

| | | |
|-------------------|---------------------|-------------------------------|
| SCALE <u>NONE</u> | DATE <u>5/31/12</u> | CONTRACT NO. <u>XX4395185</u> |
|-------------------|---------------------|-------------------------------|

| | |
|-------------------------------|----------------------------|
| DESIGNED BY <u>R. ZACHERL</u> | COUNTRY <u>MONTGOMERY</u> |
| DRAWN BY <u>ROB CICCHINI</u> | LOGMILE <u>15002829.88</u> |
| CHECKED BY _____ | TIMS NO. <u>L238</u> |
| F.A.P. NO. _____ | TOD NO. _____ |

| | | |
|---------------------|---------------------------|---------------------|
| TS NO. <u>2642B</u> | DRAWING NO. <u>2 OF 2</u> | SHEET NO. <u>OF</u> |
|---------------------|---------------------------|---------------------|